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United States District Court,D. Delaware.

BELL COMMUNICATIONS RESEARCH, INC. (now Telcordia Technologies, Inc.), Plaintiff,

v.

FORE SYSTEMS, INC. (now Marconi Communications, Inc.), Defendant.

No. Civ.A. 98-586 JJF.

Oct. 3, 2003.

Richard K. Herrmann, Dale R. Dube, of Blank Rome LLP, Wilmington, Delaware, Donald R. Dunner, Don O. Burley, Vincent P. Kovalick, Richard H. Smith, of Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., Washington, D.C, for Plaintiff, of counsel.

William J. Marsden, Jr., of Fish & Richardson P.C., Wilmington, Delaware, John E. Gartman, Christopher S. Marchese, of Fish & Richardson P.C., San Diego, California, John A. Dragseth, of Fish & Richardson P.C., Minneapolis, Minnesota, for Defendant, of counsel.

MEMORANDUM OPINION

FARNAN, J.

***1** The parties are back before the Court seeking clarification of the Court's construction of the term "empty payload field." By an Order dated August 29, 2000, the Court construed the term "empty payload field" in Claim 1 of the '306 Patent to mean a payload field with "zero data in it." (D.I.373). On appeal, the Court of Appeals for the Federal Circuit, *Bell Communications Research, Inc. v. FORE Sys., Inc.*, 62 Fed. Appx. 951 (Fed.Cir.2003), declined to address the Court's construction of the phrase "empty payload field." The Federal Circuit remanded the case for further proceedings on infringement in light of FORE's representations at oral argument that the phrase "empty payload field" "encompassed various bit signals that might maintain the stated transmission rate of a bit stream, including 'placeholders' or 'garbage bits." ' *Id.* at 957. The Court has considered supplemental Markman briefs submitted by the parties and held oral argument on the issues. [FN1]

FN1. In its prior decision, the Court set forth the technology of the '306 Patent and the relevant legal standards, and therefore, the Court will not do so again.

DISCUSSION

I. The Meaning Of "Empty Payload Field"

By its August 29, 2000, Order (D.I.373) the Court construed "empty payload field' to mean "that a frame's payload has zero data in it." (D.I.373). In seeking clarification of the Court's construction of "empty payload field," Bell contends that "empty payload field" must permit the existence of some data in the payload field. Bell contends that FORE's prior interpretation of the term "empty payload field"-that the payload field could contain nothing-was illogical. Bell argues that this became evident at oral argument in the Federal Circuit when FORE conceded that "empty payload field" must have some data in it. Bell asks the Court to clarify its construction so that it is understood that the "empty payload field" contains data of some kind, but zero source data.

In response, FORE contends that "empty" should be given its ordinary meaning-i.e. nothing. FORE contends that "empty payload field" should mean zero data. While FORE agrees with Bell's assertion that an "empty payload field" must have a lack of source data, FORE contends that that alone is insufficient to satisfy the term "empty." Further, FORE contends that its admission at the Federal Circuit that an "empty payload field" does contain "garbage bits" is not inconsistent with FORE's prior arguments before the Court and its present position. FORE contends that any garbage bits present in the payload field are merely a minimal level of background noise or interference that are ignored by the system, and thus, do nothing but take up space.

The Court will clarify its construction to reflect the Court's agreement with Bell's interpretation.

An appropriate order will be entered.

ORDER

For the reasons discussed in the Court's October 3, 2003, Memorandum Opinion, the Court construes the term "empty payload field" to mean empty of source

data, but including bit signals of some kind.

NOW THEREFORE, IT IS HEREBY ORDERED that "empty payload field" means empty of source data, but including bit signals of some kind.

D.Del.,2003.
Bell Communications Research, Inc. v. FORE Systems, Inc.
Not Reported in F.Supp.2d, 2003 WL 22295442 (D.Del.)

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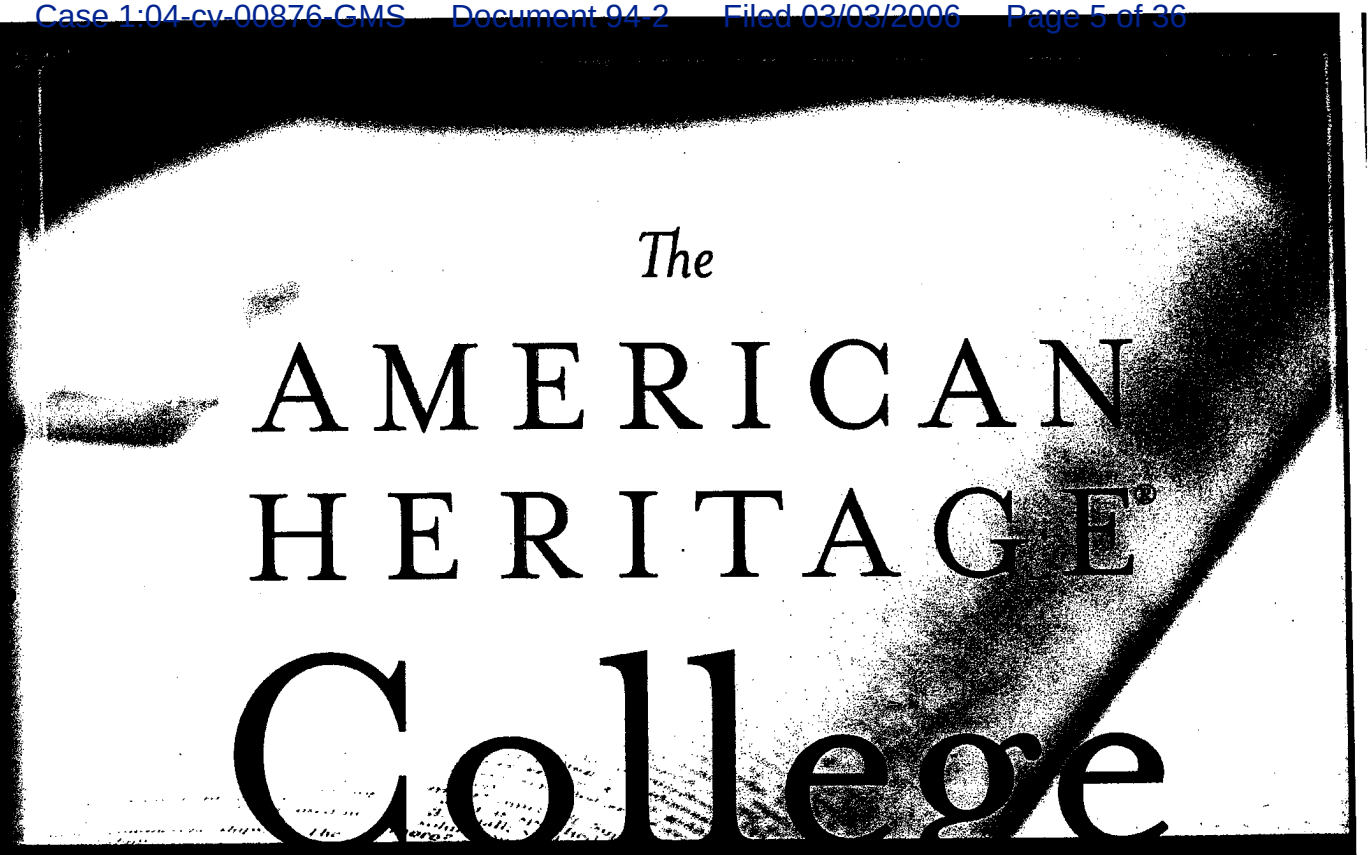
EXHIBIT B



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figurehead

Fiji

tion; expect. 3. To plan. **figure out** *Informal* 1. To discover or decide. 2. To solve or decipher. [ME < OFr. < Lat. *figūra*. See **dheigh-** in App.] —**fig′ur•er** *n.*

fig•ured (fig′yərd) *adj.* 1. Shaped or fashioned in a particular way. 2. Decorated with a design; patterned. 3. Represented, as in graphic art or sculpture; depicted.

figured bass (bās) *n.* See **continuo**. [< the numerals written underneath the notes.]

figure eight *n.* A form or representation, such as a knot or an ice-skating maneuver, that has the shape of the numeral 8.

fig•ure•head (fig′yər-hĕd′) *n.* 1. A carved figure on the prow of a ship. 2. A person given a position of nominal leadership but having no actual authority.

figure of speech *n., pl.* **figures of speech** An expression that uses language in a nonliteral way, such as a metaphor or synecdoche, or in a structured or unusual way, such as anaphora or chiasmus, or that employs sounds, such as alliteration or assonance, to achieve a rhetorical effect.

figure skating *n.* Ice skating consisting of one or more planned sequences of required and optional spins, jumps, and dancelike maneuvers. —**figure skater** *n.*

fig•u•rine (fig′yə-rēn′) *n.* A small molded or sculptured figure; a statuette. [Fr. < Ital. *figurina*, dim. of *figura*, figure < Lat. *figūra*. See FIGURE.]

fig•wort (fig′wûrt′, -wôrt′) *n.* Any of various plants of the genus *Scrophularia*, having loose branching clusters of small greenish or purple flowers. [< FIG[1], piles (dbsolete).]

Fi•ji (fē′jē) An island country of the SW Pacific Ocean comprising c. 320 islands; annexed by Great Britain in 1874 and gained independence in 1970. Cap. Suva. Pop. 784,000.

Fi•ji•an (fē′jē-ən, fi-jē′-) *n.* 1. A native or inhabitant of Fiji. 2. The Austronesian language of Fiji. —**Fi′ji•an** *adj.*

fi•la (fē′lə) *n.* Plural of **filum**.

fil•a•ment (fil′ə-mənt) *n.* 1. A fine or thinly spun thread, fiber, or wire. 2. *Botany* a. The stalk that bears the anther in a stamen. b. A chainlike series of cells, as in many algae. 3a. A fine wire heated electrically to incandescence in an electric lamp. b. *Electronics* A high-resistance wire or ribbon forming the cathode in some thermionic tubes. [NLat. *filamentum* < LLat. *filāre*, to spin < Lat. *filum*, thread.] —**fil′a•men′tous** (-mĕn′təs), **fil′a•men′ta•ry** (-mĕn′tə-rē, -mĕn′trē) *adj.*

fi•lar (fī′lər) *adj.* 1. Of or relating to a thread. 2. Having fine threads across the field of view for measuring small distances, as in a telescope eyepiece. [< Lat. *filum*, thread.]

fil•a•ree (fil′ə-rē′) *n.* See **alfilaria**. [Alteration of ALFILARIA.]

fi•lar•i•a (fə-lâr′ē-ə) *n., pl.* **-i•ae** (-ē-ē′) Any of various threadlike parasitic nematodes of the superfamily Filarioidea that live in the blood and lymphatic tissues and usu. develop as larvae in mosquitos and other biting insects. [NLat. *Filaria*, former genus name < Lat. *filum*, thread.] —**fi•lar′i•al** (-ē-əl), **fi•lar′i•an** (-ē-ən) *adj.*

fil•a•ri•a•sis (fil′ə-rī′ə-sis) *n., pl.* **-ses** (-sēz′) Disease caused by infestation of tissue with filariae. [FILAR(IA) + -IASIS.]

fil•a•ture (fil′ə-chŏor′, -chər) *n.* 1. The act or process of spinning, drawing, or twisting into threads. 2. The act or process of reeling raw silk from cocoons. 3. A reel used in drawing silk from cocoons. 4. An establishment where silk is reeled. [Fr. < LLat. *filātus*, p. part. of *filāre*, to spin. See FILAMENT.]

fil•bert (fil′bərt) *n.* 1. See **hazel** 1. 2. See **hazelnut**. [ME < OFr. *(nois de) filbert*, (nut of) Philbert, after St. *Philibert* (died 684), whose feast day in late August coincides with the ripening of the nut.]

filch (filch) *tr.v.* **filched, filch•ing, filch•es** To take (something, esp. something of little value) in a furtive manner; snitch. [ME *filchen*.] —**filch′er** *n.*

Filch•ner Ice Shelf (fĭlk′nər) An area of Antarctica at the head of Weddell Sea; first explored in 1912.

file[1] (fīl) *n.* 1. A container, such as a cabinet or folder, for keeping papers in order. 2. A collection of papers or published materials kept or arranged in convenient order. 3. *Computer Science* A collection of related data or program records stored as a unit with a single name. 4a. A line of persons, animals, or things positioned one behind the other. b. A line of troops or military vehicles so positioned. 5. *Games* Any of the rows of squares that run forward and backward between players on a playing board in chess or checkers. 6. *Archaic* A list or roll. ◆ *v.* **filed, fil•ing, files** —*tr.* 1. To put or keep (papers, for example) in useful order for storage or reference. 2. To enter (a legal document) on public official record. 3. To send or submit (copy) to a newspaper. 4. To carry out the first stage of (a lawsuit, for example): *filed charges*. —*intr.* 1. To march or walk in a line. 2. To put items in a file. 3. To make application; apply: *file for a divorce*. 4. To enter one's name in a political contest. —***idiom:*** **on file** In or as if in a file for easy reference. [< ME *filen*, to put documents on file < OFr. *filer*, to spin thread, to put documents on a thread < LLat. *filāre*, to spin, draw out in a long line < Lat. *filum*, thread.]

file[2] (fīl) *n.* 1. Any of several hardened steel tools with cutting ridges for forming, smoothing, or reducing esp. metallic surfaces. 2. A nail file. 3. *Chiefly British* A crafty or artful person. ◆ *tr.v.* **filed, fil•ing, files** To smooth, reduce, or remove with or as if with a file. [ME < OE *fīl*.]

file[3] (fīl) *tr.v.* **filed, fil•ing, files** *Archaic* To sully or defile. [ME *filen* < OE *fȳlan*. See pū- in App.]

fi•lé (fə′lā, fi-lā′) *n.* Powdered sassafras leaves used to thicken and season soups, stews, and gumbos. [Louisiana Fr. < Fr., p. part. of *filer*, to spin thread < OFr. See FILE[1].]

file•fish (fīl′fish′) *n., pl.* **filefish** or **-fish•es** Any of various chiefly tropical marine fishes of the family Balistidae with a flat body and rough spiny scales.

file•name (fīl′nām′) *n.* The name of a computer file, often containing an extension that classifies it by type.

file server *n.* A computer that controls a central repository of data that can be downloaded or manipulated by a client.

fi•let[1] (fi-lā′, fĭl′ā′) *n.* A net or lace with a simple pattern of squares. [Fr. < OFr., dim. of *fil*, thread < Lat. *filum*. See FILE[1].]

fi•let[2] (fi-lā′, fĭl′ā′) *n.* Variant of **fillet** 2. ◆ *v.* Variant of **fillet** 2.

fi•let mi•gnon (fi-lā′ mēn-yōn′, fĭl′ā) *n., pl.* **fi•lets mi•gnons** (fi-lā′ mēn-yōn′, fĭl′ā) A small, round, very choice cut of beef from the loin. [Fr. : *filet*, fillet + *mignon*, dainty.]

File Transfer Protocol *n.* See **FTP**.

fil•i•al (fĭl′ē-əl, fē′lē-) *adj.* 1. Of, relating to, or befitting a son or daughter. 2. Having or assuming the relationship of child or offspring to parent. 3. *Genetics* Of or relating to a generation or the sequence of generations following the parental generation. [ME < OFr. < LLat. *filialis* < Lat. *filius*, son.] —**fil′i•al•ly** *adv.*

fil•i•a•tion (fĭl′ē-ā′shən) *n.* 1. The condition or fact of being the child of a certain parent. 2. A line of descent; derivation. 3a. The act or fact of forming a new branch, as of a society or language group. b. The branch thus formed.

fil•i•buss•ter (fĭl′ə-bŭs′tər) *n.* 1a. The use of obstructionist tactics, esp. prolonged speechmaking, in order to delay legislative action. b. An instance of the use of this delaying tactic. 2. An adventurer who engages in a private military action in a foreign country. ◆ *v.* **-tered, -ter•ing, -ters** —*intr.* 1. To use obstructionist tactics in a legislative body. 2. To take part in a private military action in a foreign country. —*tr.* To use a filibuster against (a legislative measure, for example). [< Sp. *filibustero*, freebooter < Fr. *flibustier* < Du. *vrijbuiter*, pirate. See FREEBOOTER.] —**fil′i•bus′ter•er** *n.*

fil•i•form (fĭl′ə-fôrm′, fī′lə-) *adj.* Having the form of or resembling a thread or filament. [Lat. *filum*, thread + -FORM.]

fil•i•gree (fĭl′ĭ-grē′) *n.* 1. Delicate and intricate ornamental work made of gold, silver, or other fine twisted wire. 2a. An intricate, delicate, or fanciful ornamentation. b. A design resembling such ornamentation. ◆ *tr.v.* **-greed, -gree•ing, -grees** To decorate with or as if with filigree. [Alteration of Fr. *filigrane* : Lat. *filum*, thread + Lat. *grānum*, grain; see **gre-no-** in App.]

fil•ing (fī′ling) *n.* 1. A particle or shaving removed by a file. 2. The act or an instance of using a file.

fil•i•o•pi•e•tis•tic (fĭl′ē-ō-pī′ĭ-tĭs′tĭk) *adj.* Of or relating to an often immoderate reverence for forebears or tradition. [Lat. *filius*, son + PIETISTIC.]

Fil•i•pi•na (fĭl′ə-pē′nə) *n.* A Filipino woman or girl. [Sp. *filipina*, fem. of *filipino*, Filipino. See FILIPINO.] —**Fil′i•pi′na** *adj.*

Fil•i•pi•no (fĭl′ə-pē′nō) *n., pl.* **-nos** 1. A native or inhabitant of the Philippines. 2. The Austronesian language that is based on Tagalog, draws its lexicon from other Philippine languages, and is the official language of the Philippines. ◆ *adj.* Of or relating to the Philippines or its peoples, languages, or cultures. [Sp. *filipino* < *(Islas) Filipinas*, Philippine (Islands).]

fill (fĭl) *v.* **filled, fill•ing, fills** —*tr.* 1a. To put into (a container, for example) as much as can be held: *fill a glass with milk*. b. To supply or provide to the fullest extent: *filled the mall with new stores*. c. To build up the level of (low-lying land) with material such as earth or gravel. d. To stop or plug up (an opening, for example). e. To repair a cavity in (a tooth). f. To add a foreign substance to (cloth or wood, for example). 2a. To satiate, as with food and drink. b. To satisfy or meet; fulfill. See Syns at **satisfy**. c. To complete (something) by insertion or addition: *fill in the blanks*. d. To supply with material, such as writing. 3. To supply as required: *fill a prescription*. 4a. To place a person in: *fill a job vacancy*. b. To possess and discharge the duties of; hold. 5a. To occupy the whole of; pervade. b. To spread throughout. c. To engage or occupy completely; make full: *a story that filled our hearts with joy*. 6. To cover the surface of (an inexpensive metal) with a layer of precious metal. 7. *Nautical* To cause (a sail) to swell. —*intr.* 1. To become full. 2. To swell. Used of a sail. ◆ *n.* 1. An amount needed to make full, complete, or satisfied. 2. Material for filling a container, cavity, or passage. 3a. A built-up piece of land; an embankment. b. The material, such as gravel, used for this. —***phrasal verbs:*** **fill in** 1. *Informal* To provide with information that is essential or newly acquired. 2. To act as a substitute; stand in. **fill out** 1. To complete (a form, for example) by providing required information. 2. To become or make more fleshy. —***idioms:*** **fill (someone's) shoes** To assume someone's position or duties. **fill the bill** *Informal* To serve a particular purpose. [ME *fillen* < OE *fyllan*. See **pele-[1]** in App.]

filled gold (fĭld) *n.* A relatively inexpensive metal such as brass with a surface layer of bonded gold.

filled milk *n.* Skim milk with vegetable oils added to substitute for butterfat.

ins. *abbr.* 1. inches 2. inspector 3. insurance

in•sal•i•vate (ĭn-săl′ə-vāt′) *tr.v.* **-vat•ed, -vat•ing, -vates** To mix (food) with saliva in chewing. —**in•sal′i•va′tion** *n.*

in•sa•lu•bri•ous (ĭn′sə-lōō′brē-əs) *adj.* Not promoting health; unwholesome. —**in′sa•lu′bri•ous•ly** *adv.* —**in′sa•lu′bri•ty** *n.*

ins and outs (ĭnz; outs) *pl.n.* 1. The intricate details of a situation, decision, or process. 2. The windings of a way.

in•sane (ĭn-sān′) *adj.* **1a.** Mentally ill. b. Deranged; disturbed. c. Intended for use by the mentally ill or deranged. 2. Immoderate; wild: *insane jealousy.* 3. Very foolish; absurd: *insane risks.* [Lat. *insānus* : *in-*, not; see IN–[1] + *sānus*, sane, healthy.] —**in•sane′ly** *adv.* —**in•sane′ness** *n.*

in•san•i•tar•y (ĭn-săn′ĭ-tĕr′ē) *adj.* So unclean as to be a likely cause of disease.

in•san•i•ty (ĭn-săn′ĭ-tē) *n., pl.* **-ties** 1. Mental illness or derangement. 2. *Law* **a.** Unsoundness of mind sufficient to render a person unfit to maintain a contractual or other legal relationship or to warrant commitment to a mental health facility. b. In most criminal jurisdictions, a degree of mental malfunctioning sufficient to relieve the accused of legal responsibility for the act committed. 3a. Extreme foolishness; folly. b. Something extremely foolish.

in•sa•tia•ble (ĭn-sā′shə-bəl, -shē-ə-) *adj.* Impossible to satiate or satisfy. —**in•sa′tia•bil′i•ty, in•sa′tia•ble•ness** *n.* —**in•sa′tia•bly** *adv.*

in•sa•ti•ate (ĭn-sā′shē-ĭt) *adj.* Insatiable. —**in•sa′ti•ate•ly** *adv.* —**in•sa′ti•ate•ness** *n.*

in•scribe (ĭn-skrīb′) *tr.v.* **-scribed, -scrib•ing, -scribes 1a.** To write, print, carve, or engrave (words or letters) on or in a surface. b. To mark or engrave (a surface) with words or letters. 2. To enter (a name) on a list or in a register. 3a. To sign one's name or write a brief message in or on (a gift book, for example). b. To dedicate to someone. 4. *Mathematics* To draw (one figure) within another figure so that every vertex of the enclosed figure touches the outer figure. [Lat. *inscribere* : *in-*, in, on; see IN–[2] + *scribere*, to write; see **skrībh-** in App.] —**in•scrib′er** *n.*

in•scrip•tion (ĭn-skrĭp′shən) *n.* 1. The act or an instance of inscribing. 2. A marking, such as the wording on a coin, that is inscribed. 3. A piece of material, such as a stone tablet, that is inscribed. 4. An enrollment or a registration of names. **5a.** A short signed message in a book or on a photograph given as a gift. b. The usu. informal dedication of a book or an artistic work. [ME *inscripcioun*, statement giving the author or title of a book < Lat. *inscriptiō, inscriptiōn-* < *inscriptus*, p. part. of *inscribere*, to inscribe. See INSCRIBE.] —**in•scrip′tion•al, in•scrip′tive** *adj.* —**in•scrip′tive•ly** *adv.*

in•scru•ta•ble (ĭn-skrōō′tə-bəl) *adj.* Difficult to fathom or understand; impenetrable. See Syns at **mysterious.** —**in•scru′ta•bil′i•ty, in•scru′ta•ble•ness** *n.* —**in•scru′ta•bly** *adv.*

in•seam (ĭn′sēm′) *n.* 1. The inside seam of a pant leg. 2. The length or measurement of such a seam.

in•sect (ĭn′sĕkt′) *n.* **1a.** Any of numerous usu. small arthropod animals of the class Insecta, having an adult stage characterized by three pairs of legs and a body segmented into head, thorax, and abdomen and usu. having two pairs of wings. b. Any of various similar arthropod animals, such as spiders, centipedes, or ticks. 2. An insignificant or contemptible person. [Lat. *insectum* < neut. p. part. of *insecāre*, to cut up (transl. of Gk. *entomon*, segmented, cut up, insect) : *in-*, in; see IN–[2] + *secāre*, to cut; see **sek-** in App.] —**in′sect′** *adj.* —**in′sec•ti′val** (ĭn′sĕk-tī′vəl) *adj.*

in•sec•tar•y (ĭn′sĕk′tə-rē, ĭn-sĕk′-) or **in•sec•ta•ri•um** (ĭn′sĕk-târ′ē-əm) *n., pl.* **-tar•ies** or **-tar•i•a** (-târ′ē-ə) A place for keeping, breeding, or observing living insects.

in•sec•ti•cide (ĭn-sĕk′tĭ-sīd′) *n.* A chemical substance used to kill insects. —**in•sec′ti•cid′al** (-sīd′l) *adj.* —**in•sec′ti•cid′al•ly** *adv.*

in•sec•ti•vore (ĭn-sĕk′tə-vôr′, -vōr′) *n.* 1. Any of various small, principally nocturnal mammals of the order Insectivora, characteristically feeding chiefly on insects. 2. An organism that feeds mainly on insects. [NLat. *Insectivora*, order name : Lat. *insectum*, insect; see INSECT + Lat. *-vora*, neut. pl. of *-vorus*, -vorous.]

in•sec•tiv•o•rous (ĭn′sĕk-tĭv′ər-əs) *adj.* 1. Feeding on insects. 2. *Botany* Capable of trapping and absorbing insects.

in•se•cure (ĭn′sĭ-kyōōr′) *adj.* 1. Not sure or certain; doubtful: *an insecure future.* 2. Inadequately guarded or protected; unsafe. 3. Not firm or fixed; unsteady. 4a. Lacking emotional stability; troubled. b. Lacking self-confidence; plagued by anxiety. —**in′se•cure′ly** *adv.* —**in′se•cure′ness** *n.* —**in′se•cu′ri•ty** (-kyōōr′ĭ-tē) *n.*

in•sel•berg (ĭn′səl-bûrg′, -zəl-) *n.* See **monadnock.** [Ger. : *Insel*, island (< MHGer. *insule* < alteration of OHGer. *isila*, prob. < VLat. **Isula*; see ISLE) + *Berg*, mountain (< MHGer. *berc* < OHGer. *berg*; see **bhergh-** in App.).]

in•sem•i•nate (ĭn-sĕm′ə-nāt′) *tr.v.* **-nat•ed, -nat•ing, -nates 1.** To introduce or inject semen into the reproductive tract of (a female). 2. To sow seed in. [Lat. *insēmināre, insēminmāt-*, to implant, impregnate : *in-*, in; see IN–[2] + *sēmināre*, to plant (< *sēmen, sēmin-*, seed; see SEMEN).] —**in•sem′i•na′tion** *n.* —**in•sem′i•na′tor** *n.*

in•sen•sate (ĭn-sĕn′sāt′, -sĭt) *adj.* **1a.** Lacking sensation or awareness; inanimate. b. Unconscious. 2. Lacking sensibility; unfeeling. **3a.** Lacking sense or the power to reason. b. Foolish; witless. —**in•sen′sate′ly** *adv.* —**in•sen′sate′ness** *n.*

in•sen•si•ble (ĭn-sĕn′sə-bəl) *adj.* **1a.** Imperceptible; inappreciable. b. Very small or gradual. **2a.** Having lost consciousness, esp. temporarily; unconscious. **b.** Not invested with sensation; inanimate. c. Devoid of physical sensation or the power to react, as to pain or cold; numb. **3a.** Unaware; unmindful. b. Not emotionally responsive; indifferent. 4. Lacking meaning; unintelligible. —**in•sen′si•bil′i•ty, in•sen′si•ble•ness** *n.* —**in•sen′si•bly** *adv.*

in•sen•si•tive (ĭn-sĕn′sĭ-tĭv) *adj.* 1. Not physically sensitive; numb. **2a.** Lacking in sensitivity to the feelings or circumstances of others; unfeeling. b. Lacking in responsiveness: *insensitive to the customers.* —**in•sen′si•tive•ly** *adv.* —**in•sen′si•tiv′i•ty, in•sen′si•tive•ness** *n.*

in•sen•tient (ĭn-sĕn′shənt) *adj.* Devoid of sensation or consciousness; inanimate. —**in•sen′tience** *n.*

in•sep•a•ra•ble (ĭn-sĕp′ər-ə-bəl, -sĕp′rə-) *adj.* 1. Impossible to separate or part. 2. Very closely associated; constant. —**in•sep′a•ra•bil′i•ty, in•sep′a•ra•ble•ness** *n.* —**in•sep′a•ra•ble** *n.* —**in•sep′a•ra•bly** *adv.*

in•sert (ĭn-sûrt′) *tr.v.* **-sert•ed, -sert•ing, -serts 1.** To put or set into, between, or among. 2. To put or introduce into the body of something; interpolate. 3. To place into an orbit, trajectory, or stream. ◆ *n.* (ĭn′sûrt′) Something inserted or intended for insertion. [Lat. *inserere, insert-* : *in-*, in; see IN–[2] + *serere*, to join.] —**in•sert′er** *n.*

in•ser•tion (ĭn-sûr′shən) *n.* 1. The act or process of inserting. 2. Something inserted. 3. *Anatomy* The point or mode of attachment of a skeletal muscle to the bone or other body part that it moves. 4. *Genetics* The addition, as by mutation, of one or more nucleotides to a chromosome. —**in•ser′tion•al** *adj.*

in-ser•vice (ĭn′sûr′vĭs) *adj.* 1. Of, relating to, or being a full-time employee. 2. Taking place or continuing while one is a full-time employee.

in•ses•so•ri•al (ĭn′sĕ-sôr′ē-əl, -sōr′-) *adj.* Perching or adapted for perching. [< NLat. *Insessōrēs*, the perchers (former order name) < Lat. *insessus*, p. part. of *insidēre*, to sit upon. See INSIDIOUS.]

in•set (ĭn′sĕt′, ĭn-sĕt′) *tr.v.* **-set, -set•ting, -sets 1.** To set in; insert. 2. To furnish with an inset. ◆ *n.* (ĭn′sĕt′) 1. Something set in, as: **a.** A small map or illustration set within a larger one. **b.** A leaf or group of pages inserted into a publication. **c.** A piece of material set into a garment as decoration or trim. **2a.** An inflow, as of water. b. A channel.

in•shore (ĭn′shôr′, -shōr′) *adv. & adj.* 1. Close to a shore. 2. Toward or coming toward a shore.

in•shrine (ĭn-shrīn′) *v.* Variant of **enshrine.**

in•side (ĭn-sīd′, ĭn′sīd′) *n.* **1a.** An inner or interior part. b. Inward character, perceptions, or feelings. 2. An inner side or surface. 3. The part away from the edge; the middle part. 4. **Insides** *Informal* **a.** The inner organs; entrails. b. The inner parts or workings. 5. *Slang* Confidential or secret information. ◆ *adj.* 1. Inner; interior. 2. Relating to, known to, or coming from an exclusive group. 3. *Baseball* Passing on the side of home plate nearer the batter. Used of a pitch. ◆ *adv.* 1. Into or in the interior; within. 2. On the inner side. 3. *Slang* In prison. ◆ *prep.* 1. Within: *We'll be there inside an hour.* **2a.** On the inner side or part of. b. Into the interior of. —***idioms:*** **inside out 1.** With the inner surface turned out; reversed. 2. *Informal* As completely as possible; thoroughly. **on the inside** In a position of confidence or influence.

inside job *n. Slang* A crime perpetrated by or with the help of a person working for or trusted by the victim.

inside of *prep.* Within; inside.

In•side Passage (ĭn′sīd′) also **In•land Passage** (ĭn′lənd) A natural protected waterway extending c. 1,529 km (950 mi) from Puget Sound to Skagway AK.

in•sid•er (ĭn-sī′dər) *n.* 1. An accepted member of a group. 2. One who has special knowledge or access to information.

insider trading *n.* The illegal buying or selling of securities on the basis of information that is unavailable to the public.

inside track *n.* 1. *Informal* An advantageous position. 2. *Sports* The inside path in a curved racetrack.

in•sid•i•ous (ĭn-sĭd′ē-əs) *adj.* 1. Working or spreading harmfully in a subtle or stealthy manner. 2. Intended to entrap; treacherous. 3. Beguiling but harmful; alluring. [< Lat. *Insidiōsus* < *Insidiae*, ambush < *Insidēre*, to sit upon, lie in wait for : *in-*, in, on; see IN–[2] + *sedēre*, to sit; see **sed-** in App.] —**in•sid′i•ous•ly** *adv.* —**in•sid′i•ous•ness** *n.*

in•sight (ĭn′sīt′) *n.* 1. The capacity to discern the true nature of a situation; penetration. 2. The act or outcome of grasping the inward nature of things or of perceiving in an intuitive manner.

in•sight•ful (ĭn-sīt′fəl, ĭn′sīt′-) *adj.* Showing or having insight; perceptive. —**in•sight′ful•ly** *adv.* —**in•sight′ful•ness** *n.*

in•sig•ni•a (ĭn-sĭg′nē-ə) also **in•sig•ne** (-nē) *n., pl.* **insignia** or **-ni•as 1.** A badge of office, rank, membership, or nationality; an emblem. 2. A distinguishing sign. [Lat. *insignia*, pl. of *insigne*, badge of office, mark < neut. of *insignis*, distinguished, marked : *in-*, in; see IN–[2] + *signum*, sign; see **sek-**[1] in App.]

in•sig•nif•i•cance (ĭn′sĭg-nĭf′ĭ-kəns) *n.* The quality or state of being insignificant.

insignia
Insignia of a US submarine officer

EXHIBIT C

Westlaw.

62 Fed.Appx. 951
62 Fed.Appx. 951, 2003 WL 1720080 (C.A.Fed.)
(Cite as: 62 Fed.Appx. 951)

H
Briefs and Other Related Documents

This case was not selected for publication in the Federal ReporterNOTE: Pursuant to Fed.Cir.R. 47.6, this order is not citable as precedent. It is a public record.This case was not selected for publication in the Federal Reporter.NOTE: Pursuant to Fed.Cir.R. 47.6, this order is not citable as precedent. It is public record. Please use FIND to look at the applicable circuit court rule before citing this opinion. Federal Circuit Rule 47.6. (FIND CTAF Rule 47.6.)

United States Court of Appeals,Federal Circuit.

BELL COMMUNICATIONS RESEARCH, INC. (now known as Telcordia Technologies, Inc.), Plaintiff-Appellant,
v.
FORE SYSTEMS, INC. (now known as Marconi Communications, Inc.), Defendant-Cross Appellant.

Nos. 02-1083, 02-1084.

March 27, 2003.

Owner of patents for multiplexing and demultiplexing digital data streams sued competitor for infringement. Competitor counterclaimed, asserting noninfringement, invalidity, and unenforceability. The United States District Court for the District of Delaware, Farnan, J., 113 F.Supp.2d 635, construed claims, and entered judgment of noninfringement. Owner appealed, and competitor cross-appealed. The Court of Appeals, Clevenger, Circuit Judge, held that: (1) claim for multiplexing patent did not require that generation of frames whose payload fields had no data in them be completed before filling of such fields with data could commence; (2) competitor could not bring conditional cross-appeal; and (3) claim for demultiplexing patent required "bit stream" in question to have been formed from two or more pre-existing base-level frames.

Affirmed in part, dismissed in part, vacated in part, and remanded.

Mayer, Chief Judge, dissented and filed opinion.

West Headnotes

[1] **Patents 291 101(4)**

291 Patents
291IV Applications and Proceedings Thereon
291k101 Claims
291k101(4) k. Specifications and Drawings, Construction With. Most Cited Cases

Patents 291 168(2.1)

291 Patents
291IX Construction and Operation of Letters Patent
291IX(B) Limitation of Claims
291k168 Proceedings in Patent Office in General
291k168(2) Rejection and Amendment of Claims
291k168(2.1) k. In General. Most Cited Cases

"Filling" of "empty payload fields," as called for in patent for telecommunications device, did not require that generation of frames whose payload fields had no data in them be completed before filling of such fields with data could commence, even if at least part of frame had to be generated before it could begin receiving data, where specification disclosed features of overhead field that would permit filling to begin before generation was complete, and neither precedent, grammar, logic, specification, nor prosecution history dictated that complete frame had to be generated before filling process could begin.

[2] **Patents 291 101(2)**

291 Patents
291IV Applications and Proceedings Thereon
291k101 Claims
291k101(2) k. Construction in General. Most Cited Cases

Telecommunications device patent, calling for creation of information packets "for transmitting data ... from ... plurality of sources simultaneously," did not require that data sources insert data into empty frames at same moment in time; claim spoke not of simultaneous insertion of data into empty payload fields, but of simultaneous transmission of data from several sources in bit stream.

[3] **Patents 291 324.52**

291 Patents
291XII Infringement

291XII(C) Suits in Equity
291k324 Appeal
291k324.52 k. Parties Entitled to Allege Error. Most Cited Cases
Defendant who prevailed by obtaining judgment of noninfringement had no right to bring conditional cross-appeal to challenge claim construction rulings.

[4] **Patents 291 165(4)**

291 Patents
291IX Construction and Operation of Letters Patent
291IX(B) Limitation of Claims
291k165 Operation and Effect of Claims in General
291k165(4) k. Reading Limitations or Elements Into Claims, or Disregarding Limitations or Elements. Most Cited Cases
Claim in telecommunications device patent reciting method operating on "interleaved multiplicity of data bytes ... from plurality of identically-formatted contributory frames" required "bit stream" in question to have been formed from two or more pre-existing base-level frames, where preamble stated that bit stream was "derived from a plurality of identically-formatted contributory frames."

Patents 291 328(2)

291 Patents
291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents
291k328 Patents Enumerated
291k328(2) k. Original Utility. Most Cited Cases
4,835,768, 4,893,306. Construed.

Before MAYER, Chief Judge, CLEVENGER and BRYSON, Circuit Judges.

Opinion

CLEVENGER, Circuit Judge.
****1** Bell Communications Research, Inc. ("Bellcore," now known as Telcordia Technologies, Inc.), appeals the judgment of the United States District Court for the District of Delaware, granting judgment of noninfringement of United States Patents No. 4,893,306 (" '306 patent") and No. 4,835,768 (" '768 patent") to FORE Systems, Inc. ("FORE," now known as Marconi Communications, Inc.). *Bell Communications Research, Inc. v. FORE Sys., Inc.*, No. 98-586-JJF (D.Del. Sept.21, 2000), *amended*, No. 98-586-JJF (D.Del. Sept.21, 2001). FORE cross-appeals to contest two of the district court's claim construction rulings on the '306 patent. We *vacate* the judgment of noninfringement of the '306 patent, *affirm* the judgment of noninfringement of the '768 patent, *dismiss* the cross-appeal, and *remand* the case for further proceedings.

BACKGROUND

Both the '306 and '768 patents relate to multiplexed data transmission protocols. The '306 patent is concerned with a method of dynamic time division multiplexing (DTDM), in which a single transmission line is shared among several data sources by allocating discrete segments, or "frames," of the bit stream to each data source. Rather than pre-assign partitions of the bit stream to each data source, the system described by the patent allocates frames to each data source dynamically, depending on the priority of each data source and whether each data source has data available for transmission.

According to the disclosure of the '306 patent, the bit stream is formed by generating a train of DTDM frames, each consisting of a "transmission overhead field" that contains information about the frame and marks its boundary, and a "payload field," which is initially empty. Incoming source data streams are broken into discrete segments, or packets, each of which has a header identifying from which data source it originates. Specialized "framer" circuits in a DTDM assembler then insert the packets individually into available payload fields of the DTDM bit stream, with priority among the data sources determined automatically by the proximity of each data source's framer to the origin of the empty bit stream.

The '768 patent is addressed to a slightly different form of multiplexing, employed with a signal hierarchy termed SONET (Synchronous Optical Network). SONET transmissions are structured around an 810-byte frame, which the parties refer to ***953** as a "base-level" frame. The lowest rate of SONET communication, STS-1, transmits data at 8,000 base-level frames per second, for a serial bit transmission rate of 51.84 megabits per second. Higher rates of data transmission are achieved by interleaving multiple STS-1 frames together into a larger, "higher-level" frame. These higher-level frames are referred to generally as STS-N frames; a particular designation (such as STS-24) means a

frame with that number of STS-1 frames interleaved.

The '768 specification discloses circuitry and algorithms to perform steps in preparation for separating STS-N signals into lower-level frames. In particular, the specification describes two preliminary functions that may be performed by high-speed integrated circuits. The first function is conversion of the incoming serial data stream to parallel (byte-wide) form, also referred to as synchronization of byte formatting. In order to format the serial bit stream into data bytes with the appropriate byte registration, the protocol described in the specification identifies a signature byte, F1, that appears once in each STS-1 frame. Identification of the F1 byte in the bit stream allows the circuitry to divide the incoming bit stream into bytes with the same boundaries as the bytes of the original transmission. The second function disclosed in the specification is the identification of a "benchmark" occurring once in each higher-level frame. In a SONET STS-N frame, this benchmark is the three-byte sequence F1F2F2, marking the transition between the interleaved F1 framing bytes and the interleaved F2 framing bytes of the STS-1 frames. The '768 specification teaches that the F1F2F2 benchmark may be used to determine the boundaries of frames in the bit stream, and discloses circuitry that monitors each frame for the F1F2F2 benchmark in order to ensure that byte synchronization is maintained.

**2 Bellcore filed suit against FORE for infringement of the '306 and '768 patents, as well as two counts for infringement of other patents that have been dismissed. FORE counterclaimed, asserting noninfringement, invalidity, and unenforceability. The district court held a *Markman* hearing, and issued an opinion and order construing disputed claim terms, with a supplemental order on a means-plus-function claim of the '306 patent.

After the district court construed the claims, Bellcore advised the court that it could not prevail under the court's claim construction. Bellcore requested that the court either certify an interlocutory appeal under Rule 54(b), or enter judgment of noninfringement and dismiss FORE's counterclaims without prejudice as moot. Bellcore did not identify precisely which claim constructions precluded infringement. Over FORE's opposition, the district court complied with Bellcore's request, entering judgment of noninfringement in favor of FORE and dismissing FORE's counterclaims without prejudice as moot. The object of this exercise was to permit early review by this court of the claim constructions that precluded Bellcore from asserting infringement of the '306 and '768 patents.

FORE protested the form of the judgment, because Bellcore had not identified the relevant claim constructions that would be disputed on appeal. In response, Bellcore stipulated that the construction given to three limitations of the '306 claims and a portion of the '768 claim 13 preamble precluded a finding of infringement. The district court then granted FORE's motion to amend the judgment "to incorporate [Bellcore's] ... concessions."

Bellcore appeals the judgment of noninfringement entered against it, based on the ***954** district court's claim constructions identified in Bellcore's stipulations. Bellcore also appeals other claim constructions which do not appear to have been addressed in the stipulations. FORE cross-appeals to argue additional claim limitations of the '306 patent that were construed against it below, stating that its cross-appeal is conditional upon this court resolving the appeal on the '306 patent in Bellcore's favor. We exercise jurisdiction over the appeals pursuant to 28 U.S.C. § 1295(a)(1).

I

**3 Claims 1, 3, and 4 of the '306 patent are at issue in this appeal. Because the district court construed the terms of claims 1, 3, and 4 in conformity with each other, all the issues disputed by the parties are common to all three claims. Essentially all of the disputed language appears in claim 1:

1. A method for simultaneously transmitting data from sources having different bit rates in a telecommunication network comprising the steps of:
generating a bit stream comprising a sequence of frames, each of said frames including a transmission overhead field containing frame timing information and an empty payload field, and
filling the empty payload fields in said frames with data in packetized format from a plurality of sources which have access to the bit stream including circuit or packet sources, such that data in packetized format from any of said sources is written into any available empty payload field of any of said frames for transmitting data from each of said sources at its own desired bit rate via said bit stream and for transmitting data from said plurality of sources simultaneously via said bit stream.

As a question of law, we review the district court's claim construction without deference. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed.Cir.1998) (*en banc*). In light of Bellcore's stipulation that it cannot establish infringement without prevailing on its claim construction arguments, we confine our review to the district court's claim construction rulings.

A

The first and most salient dispute over construction of the '306 claims is whether a complete frame must be generated before a framer may begin filling it with data (FORE's position), or whether the framer can begin filling the "front" part of the frame with data while the "rear" end is still being generated (Bellcore's position). Although the district court's claim construction does not explicitly require that a "complete" frame must be generated before the payload fields are filled with data, we accept the parties' interpretation that the district court so held. Thus, the question before us is whether the first claim step ("generating") must be completed, for at least one frame, before the second step ("filling") can begin.

[1] We conclude that it does not. FORE, citing several cases in which we have construed method claims to require sequential performance of their steps, seems to suggest a general principle that method claims should be construed to require sequential performance of their recited steps. The precise question here is not whether the first step must be performed before the second step is performed, but whether it must be *completed* before the second step is begun. Regardless, as we recently reiterated in *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-71, 65 USPQ2d 1865, 1869-70 (Fed.Cir.2003), the steps of a method claim need ***955** not be performed in the order written unless logic, grammar, or the content of the specification dictates otherwise. *See also Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342, 59 USPQ2d 1401, 1416 (Fed.Cir.2001) ("Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.").

In the case of the '306 patent, neither logic, grammar, nor the specification compels the conclusion that "generating" must be complete before "filling" may begin. It is undisputed that some "generating" must precede "filling," because at least part of a frame must be generated before it can begin receiving data. But unlike railroad boxcars, in which filling of a partially generated car might pose some problems, frames are capable of receiving data even if they are only partially generated. Consequently, logic does not demand that the filling process must wait until the rear boundaries of the frame have been generated.

****4** Nor does grammar demand such a result. Because both "generating" and "filling" are continuous and concurrent processes in the method of the claims, it makes little sense to speak of the generating process being "complete" before filling begins. Indeed, as Bellcore notes, a strict grammatical requirement that the first step be complete before the second begins would lead to an unreasonable interpretation of the claim. The first step of the claim recites generation not of a single frame, but a "bit stream comprising a sequence of frames." If the first step must be completed before the second step begins, then all the frames, not just one, must be generated before any data may be inserted into the bit stream. While such a mode is theoretically possible, it would be manifestly unsuitable for continuous transmission of data in a telecommunications network.

Nor does the specification teach that generating must be completed before filling can begin. It is fair to say that the specification is silent on the subject of whether frames are generated "byte-by-byte," as Bellcore suggests, or whether complete frames are generated before data insertion begins, as FORE contends. FORE argues that Figures 2 and 4 of the specification indicate that empty frames must be generated before they can be filled. However, we agree with Bellcore that Figure 2 depicts the claimed process only schematically, not literally. While Figure 2 does show a train of pre-generated frames entering a "DTDM assembler," Figure 2 obviously does not attempt to explain how frames arise, because Figure 2 shows frames arriving from an undepicted source. Moreover, despite FORE's argument to the contrary, Figure 4 of the patent clearly depicts a "DTDM assembler" comprising a framer (52) that generates empty frames. Thus, to interpret Figure 2 literally would set it at odds with Figure 4: Figure 4 indicates that a "DTDM assembler" generates empty frames internally, instead of receiving them from an external source as depicted in Figure 2. Figures 2 and 4 therefore do not compel FORE's interpretation.

Nor does the specification describe any circuitry or algorithm that would delay the filling process until a complete empty frame was generated or received, or any indication that frames are passed from framer to

framer as frame-long chunks of data rather than byte-by-byte. Such features might be expected if FORE's interpretation were correct. However, the specification does disclose a feature that would allow a framer to begin filling frames before generation was complete. According to the specification, each frame ***956** comprises a "transmission overhead field" containing information about the contents of the frame. Included in the overhead field may be a flag indicating whether the frame is empty or full. '306 patent, col. 6, ll. 61-65. Because the transmission overhead field is shown preceding the payload field in the bit stream, *see id.* Fig. 1, a framer can determine whether an incoming frame is "empty" or "full" when it receives the overhead field, even if the remainder of the frame has yet to be generated. Accordingly, the embodiment described in the specification permits a framer to begin inserting data once it has received the overhead field and the first bytes of the payload field, without complete generation of an empty frame. This description supports Bellcore's interpretation.

Finally, FORE contends that Bellcore limited itself to a "sequential" interpretation of the claims during prosecution. When distinguishing the pending claims from the prior art (the Baran reference), Bellcore described the claimed method as "first generating a bit stream comprised of frames," and "then" inserting packets "into the empty payload fields of the frames." Statements in the prosecution history will limit claim terms to exclude interpretations disclaimed during prosecution. *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676-77 (Fed.Cir.1995). However, no such disclaimer took place here. The Baran reference which Bellcore was traversing used a completely different system of multiplexing. Bellcore did not disclaim coverage to concurrent generating and filling to overcome Baran, nor did Bellcore distinguish Baran by arguing that its invention required complete generation of the frames before filling could begin. The prosecution history therefore does not address whether generation of an entire frame must be completed before filling begins.

****5** In summary, neither precedent, grammar, logic, specification, nor prosecution history dictates that a complete frame be generated before the filling process may begin. Given that the specification discloses features of the overhead field that would permit filling to begin before generation is complete, it would be error to impose upon the claims a requirement that filling cannot begin until one or more empty frames are generated completely. We therefore agree with Bellcore that the claims encompass the insertion of data into a frame's empty payload field while the frame is still being generated.

B

The second dispute over construction of the asserted claims of the '306 patent concerns the requirement imposed by the district court that "two or more empty frames are filled at the same time by different data sources." The district court drew this requirement from the preamble language, "for transmitting data from said plurality of sources simultaneously via said bit stream." The dispute, as presented by the parties, is whether this limitation requires two or more data sources to be inserting data into empty frames at the same moment in time.

[2] We agree with Bellcore that data sources need not insert data into empty frames at the same moment in time. The claim speaks not of simultaneous insertion of data into empty payload fields, but of the simultaneous transmission of data from several sources in the bit stream. Perhaps the term "simultaneously" is ambiguous because it could refer either to events taking place at the same moment in time, or to events that both take place within a defined interval of time. But reference to the specification unquestionably***957** shows that the latter meaning is correct. The entire '306 patent is directed to time division multiplexing, and the essence of time division multiplexing is that a single communications line transmits the signals from two or more sources by allocating sequential portions of the bit stream to the competing input sources. '306 patent, cols. 1-2, 5. While any given point of the bit stream is dedicated exclusively to a single input source, over an interval of time (determined by the bit rate of the slowest data source) the bit stream will carry data from all the input sources. Hence, a time division multiplexed signal carries several input signals "simultaneously" without regard to the precise timing of data insertion.

The district court drew the opposite conclusion-interpreting "simultaneously" to mean at the same moment in time-from the specification's single use of the term "simultaneously" to describe the operation of demultiplexing circuitry. '306 patent, col. 13, ll. 49-51. But this portion of the specification refers to an entirely different aspect of the invention. Moreover, as Bellcore notes, the disclosure nowhere suggests that data is inserted into two or more empty frames at the same moment in time. According to

the specification, the timing with which interface units insert data into the bit stream is controlled solely by whether the interface unit has data stored in its FIFO, and whether upstream interface units have left empty frames available in the bit stream. *Id.* col. 9, ll. 50-53; col. 7, ll. 46-61. There is no mention of any mechanism to coordinate simultaneous insertion of data.

**6 FORE points out that it is *possible* for multiple data sources to insert data simultaneously into the bit stream, if two or more interface units have data stored in their FIFOs and have empty frames positioned in their framer units at the same time. But of course, a claimed invention is not limited to a particular mode of operation simply because it is capable of operating in that mode. We conclude that "simultaneously" in the claim preamble refers to the capability of the multiplexed bit stream to carry signals from multiple sources during a finite interval, not to any requirement that several data sources must be inserting data into empty frames at the same instant in time.

C

The third issue raised by Bellcore illustrates the difficulties posed by what are essentially interlocutory appeals from district courts' claim construction orders. The district court construed "empty payload field" to mean that "a frame's payload has zero data in it," rejecting Bellcore's argument that "empty payload field" means any condition representing an absence of source data. Bellcore is not certain exactly what the district court meant by "zero data." Nonetheless, Bellcore has appealed the district court's construction of this term, stating that it cannot prevail if the district court actually meant "no bit signals of any kind" when it said "zero data."

We decline to play Prophetes to the district court's Pythia. At oral argument, FORE stated its understanding that "zero data" encompasses various bit signals that might maintain the stated transmission rate of a bit stream, including "placeholders" or "garbage bits." Because Bellcore conceded noninfringement only under a definition of "zero data" restricted to "no bit signals of any kind," the parties' agreement on a broader meaning for "zero data" removes this limitation as grounds for noninfringement, at least at this stage of the proceedings. We need not speculate further on the district court's meaning, nor **958 refine its construction of this limitation any further on appeal.

D

**7 [3] FORE's cross-appeal addresses two additional limitations appearing in the '306 claims, "bit stream" and "frame timing information." We dismiss the cross-appeal, *sua sponte,* as improper. The district court entered judgment of noninfringement in favor of FORE and dismissed FORE's counterclaims as moot. FORE has not objected to this procedure on appeal. A prevailing party has no right of cross-appeal, *Lindheimer v. Ill. Bell Tel. Co.*, 292 U.S. 151, 176, 54 S.Ct. 658, 78 L.Ed. 1182 (1934), and a defendant who prevails on noninfringement has no right to bring a "conditional" cross-appeal to challenge claim construction rulings. *Bailey v. Dart Container Corp. of Mich.*, 292 F.3d 1360, 63 USPQ2d 1319 (Fed.Cir.2002).

Yet FORE, despite its prevailing party status, is entitled to argue those claim constructions on which Bellcore prevailed as alternative grounds for affirming the district court's judgment. *United States v. Am. Ry. Express Co.*, 265 U.S. 425, 435, 44 S.Ct. 560, 68 L.Ed. 1087 (1924); *Bailey*, 292 F.3d at 1362, 63 USPQ2d at 1320. However, we cannot determine from FORE's submissions whether the district court's judgment of noninfringement could be upheld if we were to agree with FORE's additional claim construction arguments. Bellcore has not conceded noninfringement under the two claim constructions advocated in FORE's cross-appeal, and FORE makes no attempt to demonstrate that a ruling in its favor would preclude Bellcore from establishing infringement of the '306 patent. FORE's argument on "frame timing information," in which FORE argues for a broad construction while Bellcore argues for a narrow one, may even be directed to one of FORE's dismissed invalidity counterclaims. We will not resolve disputes which we cannot relate to a case or controversy under the patent laws, and we therefore decline to address the claim construction arguments made in FORE's cross-appeal. FORE is not precluded from disputing the district court's construction of these limitations in the future.

II

Claim 13 of the '768 patent is the only claim asserted by Bellcore against FORE. We think that both parties have misconstrued claim 13. Claim 13 recites a method operating on

a serial data bit stream consisting of a continuum of an interleaved multiplicity of data bytes of predetermined size derived from a plurality of identically-formatted contributory frames each containing a plurality of said data bytes.

The parties assert in their briefs that claim 13's "contributory frames" are "base-level" frames that may be interleaved into a higher-level frame, *i.e.* STS-1 frames that may be interleaved into an STS-N frame. However, the claim speaks of only one kind of frame, and those frames might well be "contributory" to the recited *bit stream* instead of "contributory" to unrecited higher-level frames. Further, step (e) of claim 13 refers to identifying a "contiguous plurality of bytes" present in "each of said contributory frames." In the context of the SONET benchmark identification process disclosed by the specification, the "contiguous plurality of bytes" is the sequence F1F2F2. This sequence is present in each STS-N frame, but not in an STS-1 frame. '768 patent, col. 5, ll. 47-62. Indeed, the entire utility of using the F1F2F2 signal as a benchmark rests on the principle that the F1F2F2 sequence repeats once each STS-N frame. *Id.* col. ***959** 5, ll. 53-57. This disclosure cannot be reconciled with the parties' interpretation of step (e), which equates "contributory frame" with "base-level frame." We think this inconsistency reflects not a "glitch" or "mistake" in the claim (as suggested by the parties), but an error in the premise that "contributory frame" means "base-level frame."

Nonetheless, at oral argument, both parties were steadfast in their insistence that "contributory frames" in claim 13 means base-level frames such as STS-1, not higher-level frames such as STS-N. Accordingly, rather than impose our own interpretation of "contributory frame" upon the case, we will decide the claim construction dispute on the grounds set forth by the parties, and under their definition of "contributory frame" as a base-level frame.

****8** Bellcore advances, again with some uncertainty, the view that the district court limited claim 13 to require "pre-existing contributory frames." In terms of the SONET protocol, this translates to a requirement that STS-1 frames exist as distinct entities prior to being interleaved into an STS-N frame. On the premise that the district court so limited the claim, Bellcore argues that the district court erred.

[4] We affirm the district court's claim construction. The district court's claim construction order makes clear that it did require the "bit stream" in question to have been formed from pre-existing base-level frames. The district court stated that the preamble of claim 13:

means taking multiplexed STS-N frames and separating them into the original STS-1 frames that were previously combined to create the STS-N frames. The serial bit stream that is being demultiplexed must have been formed by interleaving the bytes of two or more contributory frames.

This language clearly indicates that the base-level frames must have had a separate existence prior to being interleaved into a higher-level frame.

Regardless of whether the district court was correct to require the actual separation of the higher-level frame into its base-level constituents, or whether the district court limited claim 13 to the SONET protocol, we hold that under the parties' definition of "contributory frame" the district court correctly required the bit stream to have been formed from pre-existing contributory frames.

We agree with FORE that this conclusion must follow from the preamble phrase "derived from a plurality of identically-formatted contributory frames." "Derive" is best defined here as "to have or take origin: ORIGINATE: STEM, EMANATE." *Webster's Third New International Dictionary* 608 (1993). A thing cannot originate from a source that has never existed. Consequently, a bit stream cannot be derived from base-level frames unless those frames first existed. Bellcore presents from the same dictionary the competing definition "to trace the origin, descent or derivation of," and argues that this definition supports a broader reading of "derived." However, Bellcore has put forth a definition of "derive" in its transitive sense rather than its intransitive one, and simple grammar precludes Bellcore's interpretation. In claim 13's preamble, the subject of "derived" is "bit stream," or perhaps "data bytes," and "derived" as a transitive verb would require a direct object not to be found in the claim language. Put more simply, the bit stream or data bytes of the preamble are not busy "tracing" their origin or descent, or being so traced, from anything. Claim 13 refers to a method of multiplexing, not a method of genealogy.

***960** Having concluded that the plain meaning of "derived from" supports FORE's position, we find no indication that the term actually means "following the

format of," as Bellcore contends. The specification is not particularly concerned with how the bit stream was generated, although as FORE and the district court noted, the descriptions of multiplexing and demultiplexing in the specification do refer to assembly of the bit stream from STS-1 frames, and its disassembly into STS-1 frames. '768 patent, col. 1, ll. 37-44; col. 4, ll. 9-13; col. 5, ll. 45-47. But while the algorithms disclosed in the specification might function properly on a bit stream formatted as if it were assembled from STS-1 frames, we find no indication in the specification that the claim language "derived from a plurality of identically-formatted contributory frames" has any meaning other than its plain meaning. The district court therefore correctly construed this claim language to require that the bit stream be assembled from two or more pre-existing base-level frames.

****9** Bellcore's stipulation of noninfringement, or at least that portion of it which the parties have provided to us, does not speak directly of a requirement for pre-existing base-level frames. However, Bellcore concedes that it must prevail on all its claim construction arguments in order to prevail on each patent, and Bellcore has unequivocally framed the dispute in terms of whether claim 13 requires the bit stream to be generated from pre-existing base-level frames. Moreover, from what meager information we have regarding the accused device, it appears that FORE's system does not build up a bit stream from pre-existing base-level frames. The district court's entry of judgment of noninfringement of claim 13 of the '768 patent may therefore be sustained on the basis of this holding alone. In light of this disposition, we need not address the other claim construction issues raised by Bellcore in its appeal.

CONCLUSION

For the reasons set forth above, we affirm the district court's judgment of noninfringement of the '768 patent, but vacate the district court's judgment of noninfringement of the '306 patent and remand the case for further proceedings. We dismiss FORE's cross-appeal as improper.

COSTS

No costs.

MAYER, Chief Judge, dissenting.

While I do not take issue with the court's construction of the simultaneous transmission language or the empty payload field requirement, Bell Communications ("Belcore") conceded that under the district court's claim construction, it could not prove infringement of these limitations as well as the frame limitation of claims 1, 3, and 4 of United States Patent No. 4,893,306 (" '306 patent"). Because the district court correctly concluded that the '306 patent requires generation of a complete frame prior to filling, however, I would *affirm* the judgment of non-infringement.

Claim 1 of the '306 patent requires, inter alia, *"generating* a bit stream comprising a sequence of frames, each of said frames including a transmission overhead field containing frame timing information and an empty payload field, and *filling* the empty payload fields in said frames with data in packetized format from a plurality of sources ..." '306 patent, col. 17, ll. 47-53, (emphasis added). While the steps of method claims may not necessarily have to be performed sequentially or each step fully completed before the next begins, there are method claims that require full ***961** completion of each step prior to the start of the next and a strict adherence to the sequential order. The plain meaning of the claims themselves, the place that all claim construction must begin, mandates that the generating step must be completed prior to the beginning of the filling step. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed.Cir.2002) (There is a heavy presumption that the plain meaning of the claim language controls and can only be overcome in limited circumstances.).

"Fill" is defined as "to supply with as much as can be held or contained; to put or pour something into (a receptacle) till no more can be received." 5 Oxford English Dictionary 908 (2nd ed.1989). The Webster's Dictionary provides almost the identical definition. Webster's Third New International Dictionary 849 (1993). Logic dictates that an incomplete container or frame cannot be filled because filling requires a finite volume. The patentee could have chosen alternative language to convey partial frame filling, whether by expressly stating the possibility or using a verb such as "placing" which would not require a finite volume, but did not do so. The prosecution history confirms this construction. In overcoming the Baran reference, the patentee stated that the claims require *"first generating* a bit stream comprised of *frames* with empty payload fields.... The packets are *then*

inserted into the empty payload fields ..." The patentee stated that first frames, plural, are generated and then data is inserted. The patentee makes no mention of generating the transmission overhead field of a frame and the first boundary of the payload field and then inserting data on a byte-by-byte basis. And the fact that Baran uses a different type of multiplexing is of no matter. Clear assertions made during prosecution in support of patentability, whether or not actually required to secure allowance of the claim, can create an estoppel. *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 1174, 26 USPQ2d 1018, 1025 (Fed.Cir.1993).

**10 The court frames the issue as whether the specification or the prosecution history obviates the construction that filling could begin into a partially generated frame and answers in the negative. While the specification may not expressly exclude such a construction, nothing supports it either. The specification only speaks of generated frames and is silent as to anything less.

The court cites to a paragraph in the specification and argues that it presents a possible mechanism for byte-by-byte insertion prior to completion of the frame. *Ante,* at 955-956. The cited portion of the specification states: "Typically, the bit rate of the DTDM bit stream illustrated in FIG. 1 is about 150 Megabits/sec. The following information may be available in the overhead field of every DTDM frame; frame alignment word for frame timing, empty/full status of the frame, and span identification." '306 patent, col. 6, ll. 61-65. This statement offers nothing more than the components that make up a frame and certainly does not provide support for partial frame filling. While the court is correct that it is fair to say that the specification is silent about whether frames are generated byte-by-byte or whether complete frames are generated before data insertion begins, the patentee should bear the burden for the lack of information and the plain meaning of the language chosen by the patentee should control.

C.A.Fed.,2003.
Bell Communications Research, Inc. v. Fore Systems, Inc.
62 Fed.Appx. 951, 2003 WL 1720080 (C.A.Fed.)

Briefs and Other Related Documents (Back to top)

• 2002 WL 32625311 (Appellate Brief) Reply Brief for Defendant-Cross Appellant Fore Systems, Inc. (Aug. 09, 2002) Original Image of this Document (PDF)
• 2002 WL 32625312 (Appellate Brief) Reply Brief for Plaintiff-Appellant Bell Communications Research, Inc. (Jul. 23, 2002) Original Image of this Document (PDF)
• 2002 WL 32712437 (Appellate Brief) Brief for Defendant-Cross Appellant Fore Systems, Inc. (May. 28, 2002) Original Image of this Document (PDF)
• 2002 WL 32625313 (Appellate Brief) Brief for Plaintiff-Appellant Bell Communications Research, Inc. (Mar. 18, 2002) Original Image of this Document with Appendix (PDF)
• 02-1084 (Docket) (Dec. 14, 2001)
• 02-1083 (Docket) (Dec. 14, 2001)

END OF DOCUMENT

EXHIBIT D

26 E
7-9-89

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: M. Jung

Group Art Unit: 263

Re: Patent Application of
H.J. CHAO et al.
Serial No. : 118,977
Filed : November 10, 1987
For : METHOD AND APPARATUS FOR MULTIPLEXING CIRCUIT AND PACKET TRAFFIC

AMENDMENT

9/B
8-24-89.
Fee OK

Hon. Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

In response to the Office Actions of July 3, 1989 and July 18, 1989, please amend the above-identified application as follows:

IN THE SPECIFICATION

Page 1, line 8, after "Switch", insert --, Serial No. 118,979, now Patent No. 4,855,999, issued August 8, 1989--;

line 10, after "Circuitry", insert --, Serial No. 118,897, now Patent No. 4,833,671, issued May 23, 1989--;

line 12, after "Streams", insert --, Serial No. 118,978, now Patent No. 4,833,673, issued May 23, 1989--;

line 14, after "Circuit", insert --, Serial No. 118,898, now Patent No. 4,819,226, issued April 4, 1989--.

Page 5, line 29, after "1987,", insert --now Patent No. 4,782,474, issued November 1, 1988,--.

Page 14, line 12, after "disassembler" change "45" to -- 47 --.

IN THE CLAIMS

1. (Twice amended) A method for simultaneously transmitting [circuit and packet] data from sources having different bit rates in a telecommunications network comprising the steps of:

generating a bit stream comprising a sequence of frames, each of said frames including a transmission overhead field containing frame timing information and an empty payload field, and

filling the empty payload fields in said frames with data in packetized format from a plurality of sources which have access to the bit stream including circuit or packet sources, such that data in packetized format from any of said sources is written into any available empty payload field of any of said frames for transmitting data from each of said sources at its own desired bit rate via said bit stream and for transmitting data from said plurality of sources simultaneously via said bit stream.

3. (Twice amended) A method for generating a bit stream capable of transporting data originating from both circuit transmission and packet sources comprising

generating a bit stream comprising a sequence of frames, each of said frames including a transmission overhead field containing frame timing information and an empty payload field,

packetizing data from a plurality of sources having different bit rates and which have access to said bit stream including circuit transmission sources or customer premises equipment to produce data packets, and

inserting said packets from said sources into the empty payload fields of said frames such that a packet from any of said sources is inserted into any available empty payload field of any of said frames for transmitting data from each of said sources at its own desired bit rate via said bit stream and for transmitting data from said plurality of sources simultaneously using said bit stream.

4. (Twice amended) An apparatus for assembling a dynamic time division multiplexing bit stream comprising,

generating means for generating a train of frames wherein each frame includes a transmission overhead field containing timing information and an empty payload field,

processing means for processing data from a plurality of sources into packet format, and

inserting means for receiving said train of frames and for inserting each of said packets comprised of data from one of said plurality of sources into any empty payload field[s] of any of said frames available to said inserting means to form said bit stream so that data from each of said sources can be transmitted at its own desired bit rate via said bit stream and so that data from said plurality of sources can be transmitted simultaneously via said bit stream.

68. (Twice amended) An apparatus for assembling a bit stream for transmitting data from a plurality of sources comprising:

means for generating a train of frames, each of said frames including a transmission overhead field and an empty payload field, and

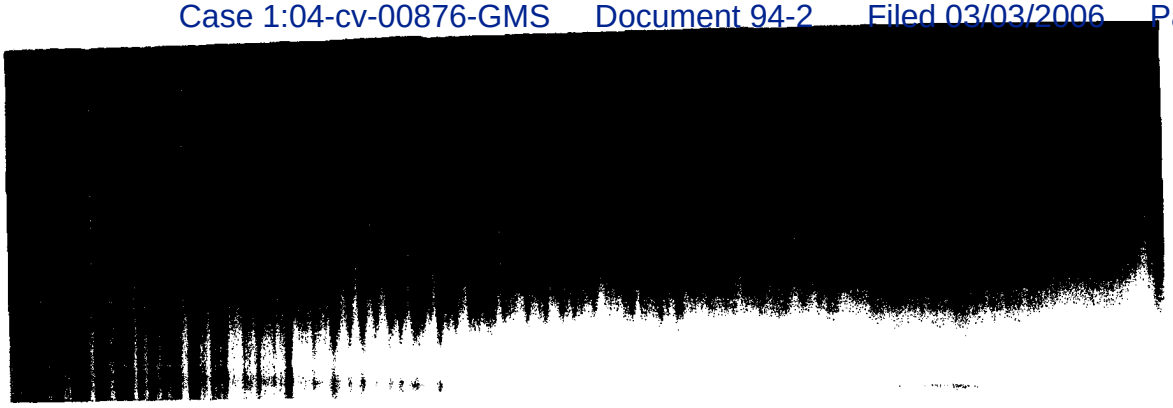
a plurality of interfaces, each of said interfaces serving to interface one of said sources with said train of frames, each of said interfaces comprising:

packetizing means for converting data into data packets,

memory means for storing at least one of said packets formed by said packetizing means, and

circuit means for inserting a packet stored in said memory means into [an] any empty payload field of any available one of said frames so that data from each one of said sources can be transmitted at its own desired bit rate via said bit stream and so that data from said plurality of sources can be transmitted simultaneously via said bit stream.

Cancel claims 8, 9 and 10.



REMARKS

The specification has been amended to identify the related applications filed on the same day as this application and referred to at page 1, to indicate the numbers of the patents issued on these applications, and to identify the patent now issued on the application referred to at page 5.

The specification is further being amended to correct the reference number at page 14, line 12, consistent with the drawing change requested with the amendment of February 15, 1989. Please ignore the requested change at page 14, line 9, of the February 15, 1989 amendment as this is in error. Applicants apologize for this mistake.

The Office Actions of July 3, 1989, which sets forth the current rejection, and of July 18, 1989, which defines the period for response, have been carefully considered. Claims 1-6 and 14 remain pending in this application. Previously pending claims 8, 9, and 10 have been cancelled herein.

In the Office Actions, claims 1-4 and 14 have been rejected as unpatentable over Shikama et al. U.S. Patent 4,685,105. Claims 5 and 6 have been rejected as unpatentable over the Shikama et al. reference taken in combination with Baran et al. U.S. Patent 4,771,425.

In response to this rejection, independent claims 1, 3, 4, and 5 have been amended to more particularly point out the claimed invention. The method and apparatus for transmitting data as set forth in independent claims 1, 3, 4 and 5 are

entirely different from the data transmission method and apparatus disclosed in the Shikama et al. reference.

As pointed out in applicants' response of February 15, 1989, it is an object of the present invention to provide a flexible network transport system for transmitting both circuit and packet traffic. To transport circuit and packet traffic in accordance with the present invention, a transmission bit stream is generated. The transmission bit stream is divided into frames. Each frame comprises at least a transmission overhead field and a payload field. The transmission overhead field includes, for example, frame timing information and information as to the empty/full status of the payload field. Initially, the payload fields in the frames are empty.

As pointed out in the prior Amendment, an empty payload field of each frame may be filled with a data packet including a header. Illustratively, the data packets may be formed from data generated by customer premises equipment, or the data packets may be formed from slots from a circuit transmission stream. Before such a slot can be inserted into an empty payload field of a frame in the transmission bit stream, it is first converted into packet format by attaching a header at the front thereof. In certain cases, it may be possible for a payload field of a frame to have the capacity for more than one packet. The data packets from a variety of sources are transmitted to remote locations via the transmission bit stream.

It is an important feature of the claimed invention that a data packet from any source can be written into any empty payload field of any available frame. It is this feature which enables the transport system of the present invention to simultaneously transmit data from sources having a variety of bit rates, as high bit rate sources can fill a relatively large number of frames while low bit rate sources fill relatively fewer frames. It is also this feature which allows each source to transmit at its own desired bit rate rather than being constrained to a particular predetermined bit rate as is the case in the circuit transmission system which is formed from a hierarchy of fixed bit rate transmission streams.

The Examiner is specifically referred to the example set forth in the prior amendment of how traffic from customer premises equipment and circuit traffic may be transmitted simultaneously in accordance with applicants' invention as set forth in the pending claims, as amended. The example is repeated here for the convenience of the Examiner.

Consider three sources, a digital phone generating 64 Kilobits/sec PCM voice, a graphics terminal sending bursty data at 1 Megabit/sec and a circuit transmission stream operating at the DS-3 rate of about 45 Megabits/sec.

A transmission bit stream is generated comprising frames with empty payload fields. Illustratively, 144,000 frames are generated per second with each frame comprising 130 bytes for a total bit rate of 150 Megabits/sec. The frames in the

transmission stream are shared by the three sources. Since the circuit source is relatively smooth, the circuit source takes approximately one out of every three frames passing by. Thus, the regularity of the circuit transmission will be maintained. Illustratively, the voice source is packetized by accumulating up to 15ms worth of voice samples before inserting this information into an empty payload field along with a header. Accordingly, the voice source will, on average, seize one out of every 2,160 frames. Similarly, because the graphics terminal is bursty, the graphics terminal will fill one frame out of 150 on average. However, in particular short intervals, the graphics terminal will take more or less than one frame out of 150.

In this manner, data from multiple diverse sources including circuit sources and customer premises equipment are combined into a single bit stream for simultaneous transmission to one or more remote locations. Because packets from each source can fill any empty payload field of any available empty frame, each source can transmit at its own desired and varying bit rate rather than be constrained to a predetermined bit rate characteristic of the network transmission system.

To define applicants' invention, in accordance with the above discussion, more precisely, the pending claims have been amended. Thus, Claim 1, for example, now recites "A method for simultaneously transmitting data from sources having different bit rates" comprising the steps therein recited "such that data in packetized format from any of said sources is written into any

available empty payload field of any of said frames for transmitting data from each of said sources at its own desired bit rate via said bit stream and for transmitting data from said plurality of sources simultaneously via said bit stream." Claim 3, as amended, similarly recites packetizing data from a plurality of sources having different bit rates. It is believed readily apparent wherein the other claims have also been amended more precisely to claim applicants' invention.

As shown in FIG 1, the Shikama et al. reference discloses a network which comprises a plurality of transmission devices 1, a circular transmission loop 2, and a plurality of data terminals 3. A transmission bit stream comprised of frames circulates on the transmission loop 2 so that a first specific transmission device 1 which receives data to be transmitted from a first specific data terminal 3 can transmit the data to a second specific transmission device 1 and a second specific data terminal 3.

The format of one frame of the transmission bit stream is shown in FIG 2 of the Shikama et al. reference. The frame 4 of FIG 2 comprises a frame management region 5 and the slots 6a, 6b, 6c, 6d, and 6e. Each slot has an access control region 7 associated therewith which indicates the status of the slot such as whether the slot is "free" or "busy".

One way for using the transmission bit stream of the Shikama et al reference may be understood in connection with FIG 3. FIG 3 shows three successive frames 4, each of which frames comprise

five slots 6a, 6b, 6c, 6d, 6e. Illustratively, a specific transmission device 1 has data 18 to transmit, which data is received from a specific data terminal 3. The data 18 is organized into transmission units or packets 15 by the specific transmission device 1.

To transmit the packets 15, the specific transmission device 1 must "catch" certain slots in the bit stream comprised of frames 4. To catch the necessary slots, the specific transmission device 1 searches for an access control region 7 which is set to "free" and changes its status to "busy." This serves to reserve the associated slot in the current frame 4 and reserves the corresponding slot in all succeeding frames 4 until the transmission is complete and the access control region of the slot in question is reset to "free." For example, as shown in FIG 3, the specific data transmission device 1 reserves the slot 6c in each frame and inserts the data packets 15 into these slots for remote transmission.

Thus, as in the claimed invention, the Shikama et al. reference discloses in connection with FIG 3 a network transmission system wherein data from a plurality of sources is packetized and wherein the packets are inserted into empty fields of a bit stream for transmission. However, the similarity between the inventive network transmission system and the transmission system of FIG 3 of Shikama et al ends at this point.

In the transmission system of FIG 3 of Shikama et al., each data source can fill only its one previously reserved slot per

frame with a data packet. Thus, regardless of the rate of data production by the particular data source, the data transmission rate for the source using the bit stream comprised of frames 4 is determined solely by the bit stream -- i.e., the data transmission rate for each source is constrained to the number of data bits available to a packet per slot multiplied by the number of frames per second. In contrast, in the claimed invention as set forth in independent claims 1, 3, 4 and 5 as amended, there is no advance reservation of particular frames or slots. Instead, each data source can insert a packet into any empty payload field of any available frame of the network transmission bit stream. Thus, the transmission bit rate of each source is determined by the source and not by the transmission bit stream.

Thus, the claimed invention realizes advantages which cannot be realized with the transmission system of FIG 3 of Shikama et al. In particular, the inventive transmission system allows a variety of sources including bursty and smooth sources with a variety of bit rates to simultaneously utilize the same network bit stream, with each source transmitting at its own desired bit rate. In contrast, as indicated above, in the system of FIG 3 of Shikama et al, each of a plurality of sources transmits at a rate determined by the network bit stream rather than at its own desired bit rate.

In connection with FIG 4, the Shikama et al reference discloses an alternative transmission system wherein a transmission device 1 can fill multiple slots 6 of the

transmission stream in succession. However, in this embodiment only one transmission device or data source can transmit at a time using the transmission stream. (Column 5, lines 34-62). This is entirely contrary to the claimed invention which is directed to a transmission system which utilizes a particular bit stream to simultaneously transmit data from a plurality of sources at bit rates desired by the sources.

For these reasons, it is respectfully submitted that the independent claims 1, 3, 4, and 5, as amended, are patentable over the Shikama reference.

Claims 2, 6, and 14 are dependent claims and are patentable over the Shikama et al. reference for the reasons stated above.

The Examiner has cited the Baran et al. reference for disclosing a packetizer and an interface for inserting a packet into a frame. The Baran et al. reference in no way makes up for the deficiencies of Shikama et al. with respect to the claimed invention. The Baran et al. reference merely discloses a switch which internally routes and transmits data in circuit or packet format.

Accordingly, it is respectfully submitted that the subject matter of claims 1-6 and 14 is patentable over the Baran et al. reference taken alone or in combination with the Shikama et al. reference.

The Examiner has also cited but has not applied Schwäertzel et al., U.S. Patent 4,321,703; Rozenblit, U.S. Patent 4,763,319; and Kume, U.S. Patent 4,706,246. These references have been

considered and it is respectfully submitted that they do not anticipate or render obvious the claimed invention.

Finally, allowance of claims 1-6 and 14 is requested. If the Examiner believes that further discussion of the matters raised herein is warranted, the Examiner is urged to telephone the undersigned.

Respectfully submitted,

H.J. Chao
S.H. Lee
L.T. Wu

By _____
James W. Falk, Attorney
Reg. No. 16,154
(201) 740-6100

Bell Communications Research, Inc.

Date: AUG 18 1989

Attached
Transmittal Letter
Acknowledgement postcard

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

H. J. Chao
S. H. Lee
L. T. Wu

CASE 1-3-2
SERIAL NO. 118,977 FILED November 10, 1987
GROUP ART UNIT 263
EXAMINER M. Jung
TITLE Method and Apparatus for Multiplexing Circuit and Packet Traffic

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

Enclosed is an amendment in the above-identified application.

[X] **No additional fee is required, as shown below.**
[ ] **A check in the amount of $_____ is attached to cover the fee, which has been calculated as shown below.**

CLAIMS AS AMENDED						
(1)	(2) CLAIMS REMAINING AFTER AMENDMENT	(3)	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEE
TOTAL CLAIMS FOR FEE PURPOSES	7	MINUS	20	0	x $12	0
INDEPENDENT CLAIMS	4	MINUS	7	0	x $34	0
MULTIPLE CLAIM(S) FIRST PRESENTED WITH THIS AMENDMENT	NO [ ]	YES [ ]			IF YES, +$110	0
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT →						$ 0

In the event of any non-payment or improper payment of a required fee, the Commissioner is authorized to charge deposit account 02-1820 as required to correct the error.

James W. Falk/ccd
Attorney for Applicant(s)

Date: AUG 18 1989

Bell Communications Research, Inc.
290 West Mount Pleasant Avenue -Room 2E-304
Livingston, NJ 07039

FT. 16 8/87 (rdp)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D. C. 20231.
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Date AUG 18 1989
Wanda M Kielblock
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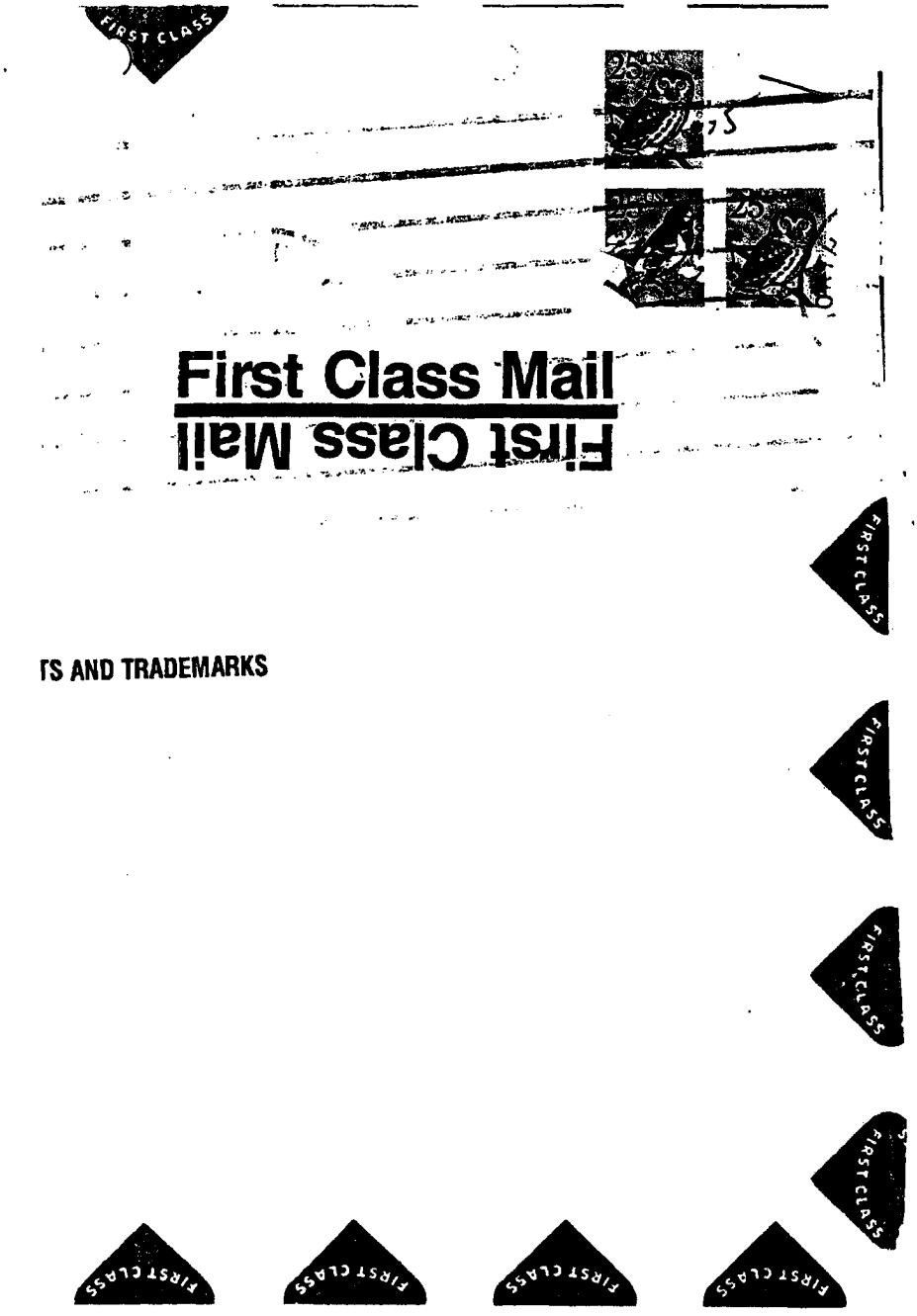

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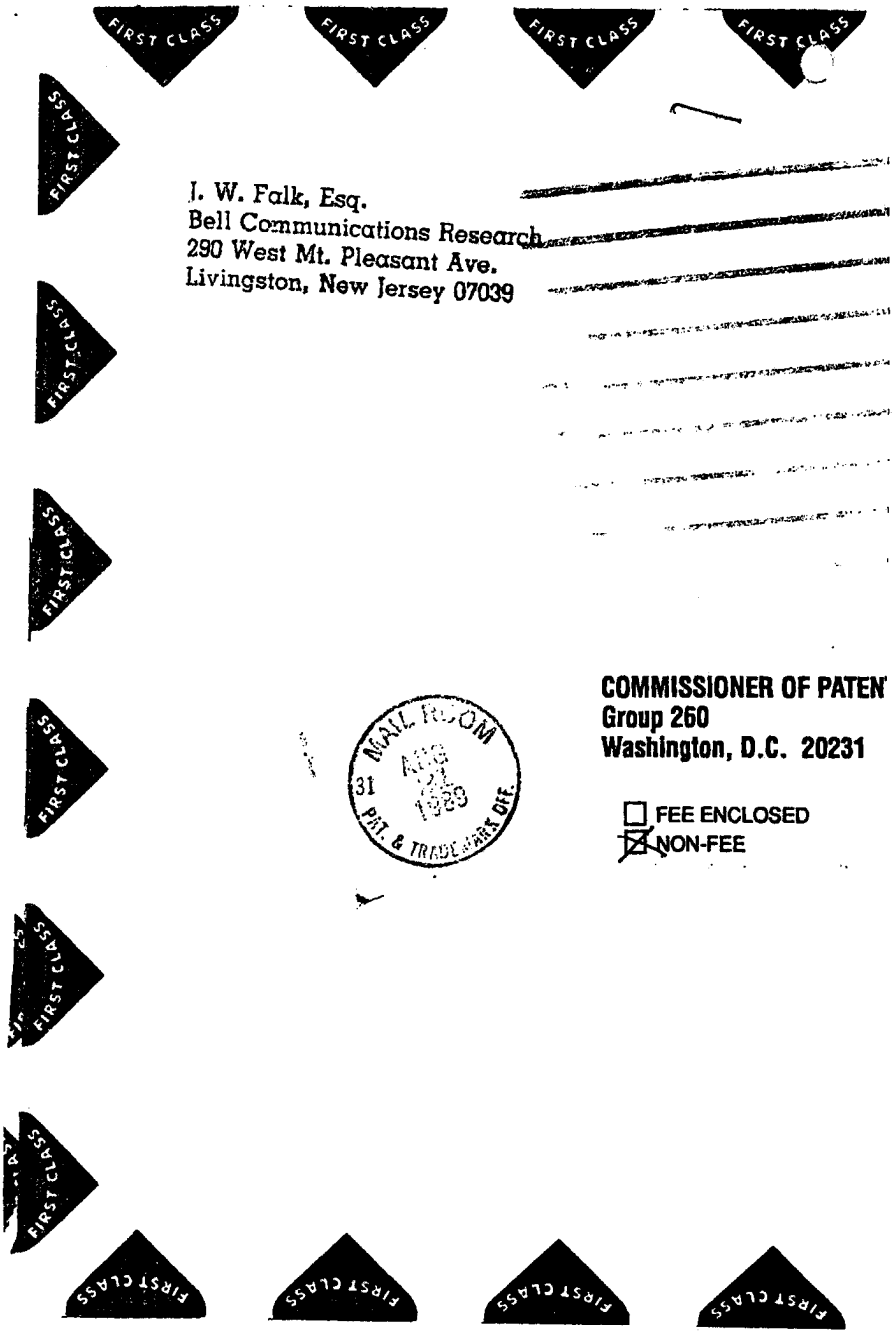
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